

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A polymetaphenylene isophthalamide-based polymer porous film with a gas permeability of 0.2-1000 ml/sec, which retains at least 60% of its gas permeability after heat treatment at 350°C for 10 minutes compared to before treatment, while also having a porous structure with a porosity of 60-80% and a cross-sectional pore laminar coefficient of 2.5 or greater, and having a specific Young's modulus of 200-800 (kgf/mm²)/(g/cm³) in at least one direction.

2. (canceled).

3. (canceled).

4. (currently amended): A porous film according to ~~any one of claims 1 and 3~~, which has a thickness of 1-10 μm and is self-supporting.

5. (currently amended): A polymetaphenylene isophthalamide-based polymer porous film containing inorganic whiskers having a long axis dimension L of 10 - 100 μm and having a porosity of 10-80% and a specific Young's modulus of 200-5000 (kgf/mm²)/(g/cm³) in at least one direction.

6. (original): A polymetaphenylene isophthalamide-based polymer porous film according to claim 5, wherein the weight ratio of the polymetaphenylene isophthalamide-based polymer to the whiskers is 50:50 to 99:1.

7. (currently amended): A polymetaphenylene isophthalamide-based polymer porous film ~~according to claim 5 or 6, wherein the~~ containing inorganic whiskers ~~have~~ with a long axis dimension L of 0.1-100 μm , a short axis dimension D of 0.01-10 μm and an L/D ratio of 1.5 or greater, and having a porosity of 10-80% and a specific Young's modulus of 200-5000 (kgf/mm²)/(g/cm³) in at least one direction.

8. (withdrawn): A process for the production of a polymetaphenylene isophthalamide-based polymer porous film, comprising casting a dope prepared by dissolving a polymetaphenylene isophthalamide-based polymer in an amide-based solvent, and coagulating it in a coagulating bath comprising an amide-based solvent containing a non-solvent for said polymer.

9. (withdrawn): A process according to claim 8, wherein the concentration of the amide-based solvent in the coagulating bath is 30-80 wt% and the temperature is 0-98°C.

10. (withdrawn): A process according to claim 8 or 9, wherein the non-solvent for the polymetaphenylene isophthalamide-based polymer is water.

11. (withdrawn): A process according to claim 8, wherein the dope prepared by dissolving a polymetaphenylene isophthalamide-based polymer in an amide-based solvent contains no inorganic salts.

12. (withdrawn): A process according to claim 8, wherein after coagulation, the porous film is rinsed with water, dried and then stretched to a factor of 1.3-5 in the uniaxial direction or to a factor of 1.3-10 in the orthogonal biaxial directions on an area scale, at a temperature of 270-340°C.

13. (withdrawn): A process according to claim 8 wherein, after coagulation, the porous film is further stretched in a stretching bath comprising an amide-based solvent containing a non-solvent for the polymetaphenylene isophthalamide-based polymer.

14. (withdrawn): A process according to claim 13, wherein the concentration of the amide-based solvent in the stretching bath is 5-70 wt% and the temperature is 0-98°C.

15. (withdrawn): A process according to claim 8, wherein the coagulation is followed by immersion in a bath comprising an amide-based solvent containing a non-solvent for the polymetaphenylene isophthalamide-based polymer, with an amide-based solvent concentration of 50-80 wt% and a temperature of 50-98°C.

16. (withdrawn): A process according to claim 15, wherein the dimethylformamide-insoluble portion of the porous film after immersion is 10% or greater.

17. (withdrawn): A process according to claim 15 or 16, wherein after the immersion the porous film is rinsed with water, dried and then heat treated at a temperature of 290-380°C.

18. (withdrawn): A process according to claim 15 or 16, wherein after the immersion the porous film is rinsed with water, dried and then stretched to a factor of 1.3-5 in the uniaxial direction or to a factor of 1.3-10 in the orthogonal biaxial directions on an area scale, at a temperature of 270-380°C.

19. (withdrawn): A process according to claim 15 or 16, wherein after the immersion the porous film is further stretched in a stretching bath comprising an amide-based solvent containing a non-solvent for the polymetaphenylene isophthalamide-based polymer.

20. (withdrawn): A process according to claim 19 wherein, after the stretching, the porous film is rinsed with water, dried and then heat treated at a temperature of 290-380°C.

21. (withdrawn): A process according to claim 19, wherein the concentration of the amide-based solvent in the stretching bath is 5-70 wt% and the temperature is 0-98°C.

22. (withdrawn): A process according to claim 8, wherein the dope used is one in which inorganic whiskers are dispersed and a polymetaphenylene isophthalamide-based polymer is dissolved in an amide-based solvent.

23. (withdrawn): A process according to claim 22, wherein the weight ratio of the polymetaphenylene isophthalamide-based polymer to the whiskers is 50:50 to 99:1.

24. (withdrawn): A process according to claim 22 or 23, wherein the inorganic whiskers have a long axis dimension L of 0.1-100 μm , a short axis dimension D of 0.01-10 μm and an L/D ratio of 1.5 or greater.

25. (withdrawn): A porous film comprising at least two layers including a polymetaphenylene isophthalamide-based polymer porous layer and a heat-melting thermoplastic polymer porous layer.

26. (withdrawn): A porous film according to claim 25, wherein the thermoplastic polymer is a polyolefin with a molecular weight of 400,000 or greater.

27. (withdrawn): A porous film according to claim 25, wherein the thermoplastic polymer is a polyvinylidene fluoride-based polymer.

28. (withdrawn): A porous film according to claim 27, wherein the polyvinylidene fluoride-based polymer is a copolymer composed mainly of vinylidene fluoride and a perfluoro lower alkyl vinyl ether.

29. (withdrawn): A porous film according to any one of claims 25 to 28 wherein, at elevated temperatures, the thermoplastic polymer layer melts and plugs the pore gaps, while the polymetaphenylene isophthalamide-based polymer layer retains its shape without melting.

30. (withdrawn): A process for the production of a porous film which comprises forming a porous layer of a polymetaphenylene isophthalamide-based polymer onto one or both sides of a porous film made of a heat-melting thermoplastic polymer, or forming a porous layer made of a heat-melting thermoplastic polymer onto one or both sides of a porous film of a polymetaphenylene isophthalamide-based polymer.

31. (withdrawn): A battery separator comprising a porous film according to any one of claims 25 to 28.

32. (withdrawn): A lithium ion battery employing a battery separator according to claim 31.

33. (previously presented): A method of using a porous film according to any one of claims 1, 3 and 5-6 comprising placing said porous film as a battery separator between a positive electrode and a negative electrode in a battery.

34. (currently amended): A lithium ion battery comprising a battery separator situated between a positive electrode and a negative electrode, wherein said battery separator ~~comprises~~ consists of a porous film according to any one of claims 1, ~~3~~ and ~~5-6~~ 4-7.

35. (canceled).

36. (new): A polymetaphenylene isophthalamide-based polymer porous film with a gas permeability of 0.2-1000 ml/sec, which retains at least 60% of its gas permeability after heat treatment at 360°C for 10 minutes compared to before treatment, while also having a porous structure with a porosity of 60-80% and a cross-sectional pore laminar coefficient of 2.5 or greater, and which is obtained by a process comprising a step of casting a dope prepared by dissolving a polymetaphenylene isophthalamide-based polymer in an amide-based solvent and a step of coagulating the cast dope in a coagulating bath comprising an amide-based solvent containing a non-solvent for the polymer.

37. (new): A method of using a polymetaphenylene isophthalamide-based polymer porous film as a separator disposed between an anode and a cathode of a battery, wherein the porous film has a gas permeability of 0.2-1000 ml/sec, retains at least 60% of its gas permeability after heat treatment at 360°C for 10 minutes compared to before treatment, while also having a porous structure with a porosity of 60-80% and a cross-sectional pore laminar coefficient of 2.5 or greater, and having a specific Young's modulus of 200-5000 (kgf/mm²)/(g/cm³) in at least one direction.